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From: Backer, Dana
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Hello,

I've attached a draft of the cultural resource section of the science plan. We are using the NLCS template and differs from previous versions you may have worked on. Section 2 and 3 are what I would like you to review. The other sections of the NLCS template with notes are included in the draft (highlighted in gray) so you can see the context of the overall document but these sections do not need editing.

I am really struggling with section 3 "Management Decisions and Science Needs". It is the the decisions that mngt will be making in the next 5+ years and the science needed to support this decision. If it would work better to have a discussion about this, I'd be happy to. This has worked well for other sections.

Matt Z., I know you have been in a significant amount of time in the past on various versions of the science plan. I want to make this as painless as possible. There is slightly more than one page review. This will NOT be a time sink I guarantee.

Yellow highlights are questions for the you. Blue highlights are notes to me.

If I could please get comments back by **August 31**, I would be delighted and you will avoid be wrangled. Travis please feel free to send to others in your division.

Thanks in advance.

Dana Backer
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GSENM (NCS) SCIENCE PLAN – OUTLINE

Dana follow-up
Important notes to move forward
Need your input
Notes/bullets/template from NLCS template

I. INTRODUCTION AND SCIENTIFIC MISSION

A. Purpose of National Conservation Lands science plans
   1. Introduce National Conservation Lands
   2. Objectives of plan (living document)
   3. Define science (see Advancing Science in the BLM, Science Strategy, BLM UT)
B. Unit and geographic area description (surrounding neighbors, incl. map)
   1. GSENM resources, objects, and values reference to the designating language
   2. MMP, Amends, other legislation
C. Scientific mission
   1. science to inform management;
   2. science to understand or protect the resources, objects, and values

II. SCIENTIFIC BACKGROUND Of GSENM

(provide clear, concise, current summary of research and sci info)

Notes from template

- Provide the current scientific baseline of the unit
- Provide brief background, purpose, and summary of findings and several citations to relevant reports or articles for each subject
- Include distinct discussion of the resources, objects, and values for which the unit was designated and describe the scientific understanding we have of these resources, objects, and values (e.g. status, trend, other research results)
- Include discussion of the understanding gained from landscape-scale assessments that include the National Conservation Lands unit (e.g. Rapid Ecoregional Assessments). For example, what do landscape-scale assessments tells us about: integrity, threats, landscape role
- Identify ongoing inventory and monitoring efforts (e.g. land health evaluations, Assessment, Inventory, and Monitoring (AIM) Strategy implementation)

CULTURAL RESOURCES

Preservation of cultural resources was one of the many reasons for Monument designation. The Proclamation identifies occupation of the Anasazi and Fremont cultures of the past, as well as modern Native American tribal groups, the South Paiute and Navajo. Cultural resources represent important records of prehistoric and historic cultures and events that have intrinsic value to contemporary Native American tribes (Hopi, Paiute and Navajo) and ancestors of the Mormon pioneers. Sites and artifacts date back to the Early Archaic time (8000-5000 BC) (Spangler, 2001). See Figure X (timeline Mary sent me) depicting previous cultures, their activities and noteworthy historical events.

The MMP stresses the importance of inventorying, documenting and protecting archeological and

historical resources and to evaluate their potential for conservation, research and interpretation. Current efforts focus on identifying, stabilizing and preventing damage to cultural resources. Cultural resource site surveys are conducted for compliance with Section 106 of National Historic Preservation Act of 1966 before any ground disturbance project.

Early explorers of the area include expeditions by John Wesley Powell in 1872 and soon there after, the Mormon pioneers traversed the Hole in the Rock Trail. As part of their early colonization efforts, the pioneers spent several months at Dance Hall Rock (a National Historic Site) while expanding the rock crevice that would allow them to pass through to the Colorado River in route to the Four Corners area. Several communities around the periphery of the Monument were established between the 1860s and the 1880s by Mormon settlers. These historic settlers built cabins, dams and reservoirs, cowboy line camps, trails, and cemeteries, with evidence still existing today.

Substantial effort has been invested in collaborating with local communities, organizations, Native American tribal members and others to document and showcase the history and people of the region through the ongoing Oral History Program.

Unique historic routes include the Old Spanish Trail, a historic trade route, the Boulder Mail Trail, the Hole-In-The-Rock Expedition Trail,(are there other National Register of Historic Places?? looking at the website is Cottonwood Canyon Cliff Dwelling on the Monument) Cultural resources also include Traditional Cultural Properties, Native American Cultural Sites, and ethnography studies such as the current grazing and ranching history of the area in and around the Monument. The Hole in the Rock Trail is currently being considered Traditional Cultural Properties designation.

Only an estimated 7% (130,000 acres) of the Monument has been inventoried for archaeological and historical sites while some of the localized historic sites such as Old Paria Townsite are 100% inventoried (2016 mngers report). There are over 5,000 recorded sites including rock art, occupation sites, and granaries; 270 recorded historic inscriptions; and approximately 56 identified cowboy line camps that are currently used. Approximately 90 sites per year are monitored for preservation and damage, by site stewards, staff, and interns. Damage can occur through ground disturbance activities associated with construction projects, visitation, right-of-ways, research activities, livestock grazing, etc. Other damage includes looting, vandalism, and destabilization through the natural erosion process. The recent manager's National Conservation Land report (2016) states the status and trends for cultural resources are "generally good" and "generally stable" with a downward trend.

In addition to the survey work, Cultural Resource Specialists and researchers continue to analyze information from the two pollen cores extracted in 2012-2013 while other researchers are conducting extensive archaeologic inventories in the vicinity of the pollen cores. The research and surveys will provide historic and prehistoric use of the landscape and climate change. Most all of the cultural resource research can be found in the GSENM Science Symposium documents (1997, 2006, 2016), Kaibabitsinungwu: An Archaeological Sample Survey of the Kaiparowits Plateau (Geib et al. 2001), and Formative Chronology and Site Distribution on the Grand Staircase-Escalante National Monument: A Research Reference (McFadden 2016). Jerry Spangler 2001 Class 1 Overview can you help me find this document?

III. MANAGEMENT DECISIONS AND SCIENCE NEEDS (see VCNM for this section)
(Identify and prioritize management questions and science needs)
This will be one section for the whole monument not by subject matter.

A. Describe the management decisions that the BLM expects to make in the next five-plus years for the unit

Need MLT input working on it

As the specialist, what do you decisions do you foresee being made in your area of expertise in the next 5-10 years?

I know there will need to make livestock allotment permit renewals. Cultural surveys were initiated in 2001 are the surveys completed? IF not then we can tie this into the other sections.

Native American tribal relations?

B. Describe the scientific knowledge needed to support those management decisions

Centralize and integrate spatial resource object inventories
Transcribe non-spatial inventories and datasets to geospatial DB.
Utilize other available data sources.

Comprehensive cultural resource surveys

Have Hopi and Kaibab Paiute ethnographies (Navajo, Ute, Zuni completed) – what would the management decision be that these ethnographies could inform.

C. Of the scientific knowledge needed, identify which knowledge is already accessible and which knowledge needs more scientific effort. The latter are the unit's science needs

Notes from template…Science needs should:

- Be kept up-to-date and responsive to changing priorities
- Consider both local and landscape-level issues
- Build from information provided in Section 2
- Prioritize the science needs - TABLE,
- Describe the prioritization criteria (see VCNM)
- Acknowledge that science needs can change in priority, when appropriate
- Display the prioritized science needs in a concise and clear format, accessible to both internal and external audiences

IV. MEETING SCIENCE NEEDS

(Develop a clear plan to meet priority science needs)

A. Internal organization
   1. Internal and external point-of-contact for scientific inquiries (SciProgCoord, NLCS UT lead, MonMnger)
   2. Roles and responsibilities of the each POC
   3. Define a process for requesting and utilizing available BLM funds for meeting science needs

B. Collaboration and partners
   1. Outreach to science partners; list of past and potential future partners; universities, MAC, CESUs, NGOs, and friends groups. (Appendix a list? Or just be general)

2. Recruit research partners to address sign needs

V. SCIENCE PROTOCOLS
(Develop clear and consistent science protocols, scientific method)

A. Develop general science guidelines
- science should comply with relevant laws and regulations
- encourage adoption of standardized data collection methods (e.g. AIM Strategy protocols)

B. Data management (tracking, storage, authorization)
1. Non-spatial
2. Spatial

C. Reporting requirements for sci projects (annual mngr report, publications, sci symposium, etc.)

Develop data management capacity

VI. ORGANIZATION AND COMMUNICATION OF COMPLETED SCIENCE
(Create a system for organizing and communicating completed scientific efforts)

Notes from template
- Internal organization of science
- Science reports should be organized and accessible within the unit's file system
- Sensitive data should be redacted, if appropriate
- When feasible, the unit should work with partners to write synthesis reports on scientific findings
- Contribution to broader BLM organization of science; make available in a national database (is there one like IRMA?), SUU
- Communication of scientific projects and results to the public

VII. INTEGRATING SCIENCE INTO MANAGEMENT
(Create a process to make relevant science easily available during the decision- making process)

Ensure decision-makers have access to relevant science and are familiar with the format, applicability, and limitations

Take all opportunities to share science results in a variety of mediums (e.g. email newsletters, presentations, seminars)

The process of using science in decision-making should provide an opportunity to identify further science needs

The unit science point-of-contact should strive to communicate scientific results with other staff

VIII: SCIENCE PLAN REVIEW AND APPROVAL

Purpose: Ensure a quality product that has been well-reviewed

Reviewers can include all appropriate parties, both internal and external to the BLM
Signers on the Science Plan should include, but are not limited to:
Unit Manager, Field Manager, State National Conservation Lands Lead, National Conservation Lands Science Advisor, National Conservation Lands Division Chief

IX: BIBLIOGRAPHY

A bibliography for citations from the science plan
A bibliographic list of completed science reports from the units

X: UNIT'S LEGISLATION

Include a copy of the unit's designating legislati